Midland Community Meeting

Michigan Department of Environmental Quality

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MDEQ's Role and Involvement

- MDEQ is the principal agency responsible for administering numerous state and federal environmental laws in Michigan

- These laws are designed to be protective of human health and the environment and are to be implemented in a manner that prevents harm before it occurs

MDEQ's Goal

- Work closely with Dow, the city of Midland, and the community to ensure the selected remedial action(s) is
  - Protective of human health and the environment
  - Cost effective
  - Complies with State and federal law

Where are we in the process and how did we get here?

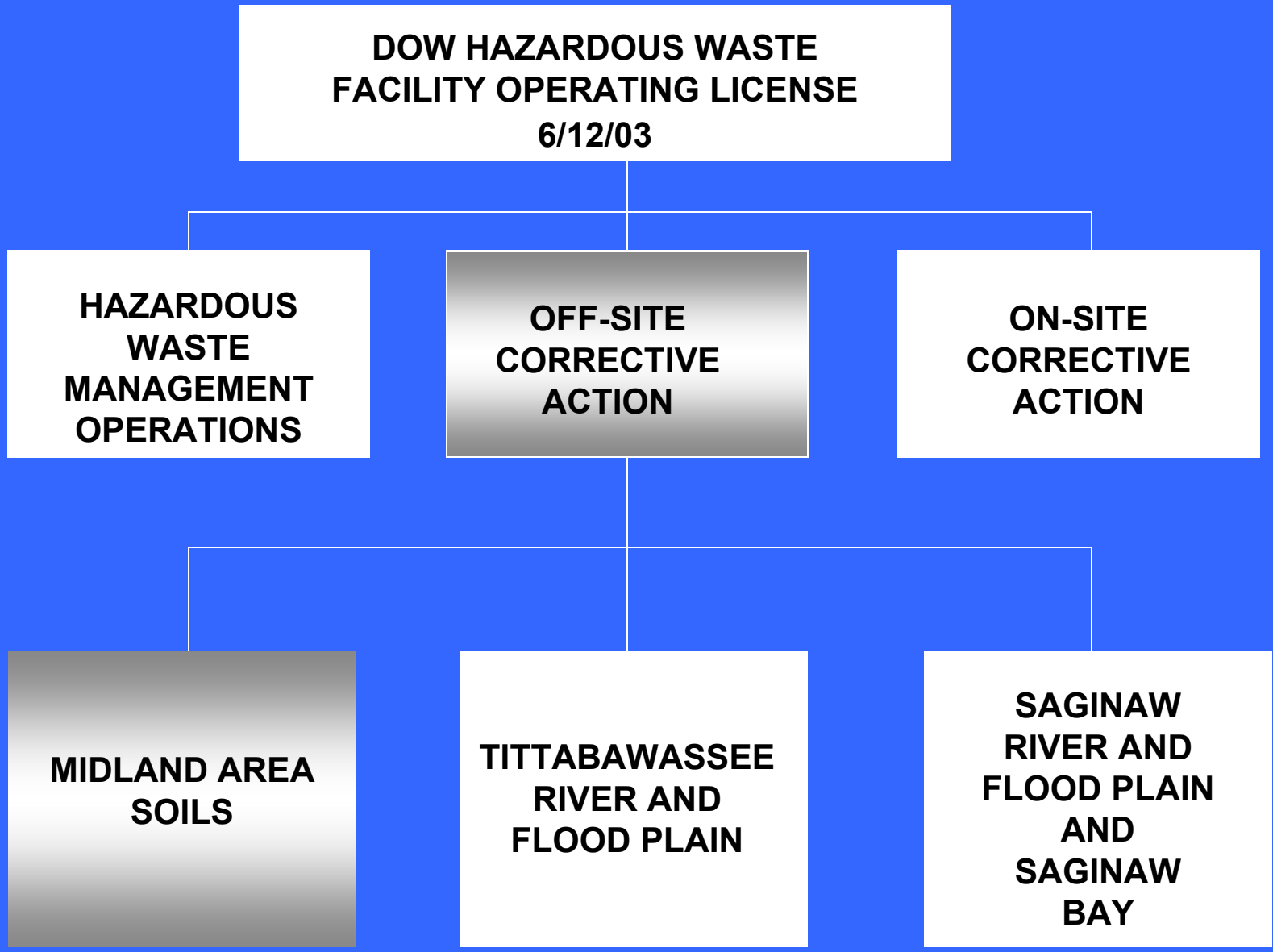
- Mid-1980s Dioxin Studies
  - MDEQ/EPA working to address Dow dioxin releases
- 1988 - EPA issued hazardous waste permit to Dow with follow-up actions

Where are we in the process and how did we get here? (Cont'd.)

- **1988** - EPA also recommended several precautionary measures to Midland residents:
  - **Eat less Tittabawassee River fish**
  - **Limit contact with contaminated soil**

Where are we in the process and how did we get here? (Cont'd.)

- 1996 - MDEQ authorized by EPA to administer the corrective action program in Michigan
  - 1996 - MDEQ Soil Dioxin Sampling
  - 1998 - Limited Dow Soil Dioxin Sampling
- 2003 - State issued Dow operating license


DOW HAZARDOUS WASTE FACILITY OPERATING LICENSE 6/12/03
HAZARDOUS WASTE MANAGEMENT OPERATIONS
OFF-SITE CORRECTIVE ACTION
ON-SITE CORRECTIVE ACTION
MIDLAND AREA SOILS
TITTABAWASSEE RIVER AND FLOOD PLAIN
SAGINAW RIVER AND FLOOD PLAIN AND SAGINAW BAY

What is Corrective Action?

- Phased process to address historic, current, and future releases from, in this case, Dow
- Companies are subject to corrective action for releases that occur within and beyond the plant site boundary

Common Corrective Action Terminology

- Scope of Work (SOW) - Blueprint for development of RI and prioritization of IRAs; unique to Dow's process
- Interim Response Activities (IRA) - Immediate response to prevent or reduce exposures before a final remedy is selected
- Remedial Investigation (RI) - Investigate presence and extent of contamination
- Feasibility Study (FS) - Determine the appropriate remedial activity to address contamination
- Remedial Action Plan (RAP) - Implementation of the selected remedial activities

What is the 1,000 parts per trillion (ppt) level?

- 1,000 ppt - action level set by Centers for Disease Control in 1984
- Appears to have been based on analytical capabilities at the time
- In 1984, Kimbrough, et al, concluded that "in residential areas, levels at or above 1,000 ppt of dioxin in soil cannot be considered safe and represent a level of concern"

What is the 1,000 ppt level? (Cont'd.)

- Since 1984, hundreds of studies on dioxin toxicity have been completed
- After 11 scientific peer reviews, the basic conclusion is that dioxin is more toxic than previously thought
- EPA's Draft Dioxin Reassessment recommends increasing the cancer slope factor by about 6 – this would dramatically *decrease* the number
- Actions taken consistent with 1,000 ppt do not result in closure/finality. EPA has indicated it will reassess previous actions when Dioxin Reassessment is finalized

What is the 90 ppt level? (Cont'd.)

- Cleanup levels must protect against the most sensitive effect (cancer or other adverse health effects)
- By law, the MDEQ is required to develop criteria based on 1 additional cancer above the background cancer rate per 100,000 individuals for all land uses

How is 90 ppt calculated?

- Acceptable soil criteria are calculated using a formula (algorithm) that takes into account this risk level
- Formula is also based on the contaminant toxicity (cancer potency value) and exposure (e.g., duration and frequency)
- Reasonable assumptions about a person's exposure that go into this formula are described on the handout

How would recent scientific information affect the criterion?

- The 90 ppt number was calculated in 1995
- Since 1995, hundreds of dioxin toxicity studies have been conducted
- Accounting for these studies, the 90 ppt number would be lower

How does 90 ppt compare to other states?

STATE	LEVEL (ppt)
Oregon	3.9
Massachusetts	4.0
West Virginia	4.1
Washington	6.7
Florida	7.0
Iowa	14
Arizona	38
Pennsylvania	120
Minnesota	200

Exposure Investigation/Health Studies

- MDEQ supports properly designed/conducted Exposure Investigations or Health Studies
- MDCH's Pilot Exposure Investigation could provide valuable information to individual participants
- A properly conducted health study could provide valuable information to the community and health departments whether intervention is necessary
- Given the preventative nature of cleanup standards, these studies will not change the environmental protection standard of 90 ppt

What does “facility” mean?

- Any area, place, or property where Dow’s releases have caused a hazardous substance to be present in excess of the generic residential criteria is part of the “facility”
- Dow is required to take corrective action both on-site and off-site to address the entire Dow “facility”

What does “facility” mean? (Cont’d.)

- The MDEQ does not “designate” properties as a “facility”
- An area, place, or property where dioxin is removed to less than 90 ppt will no longer be part of the “facility”

What are my obligations if my property has been affected by dioxin releases from Dow?

- Notification before property transfer
- Prevent “exacerbation”

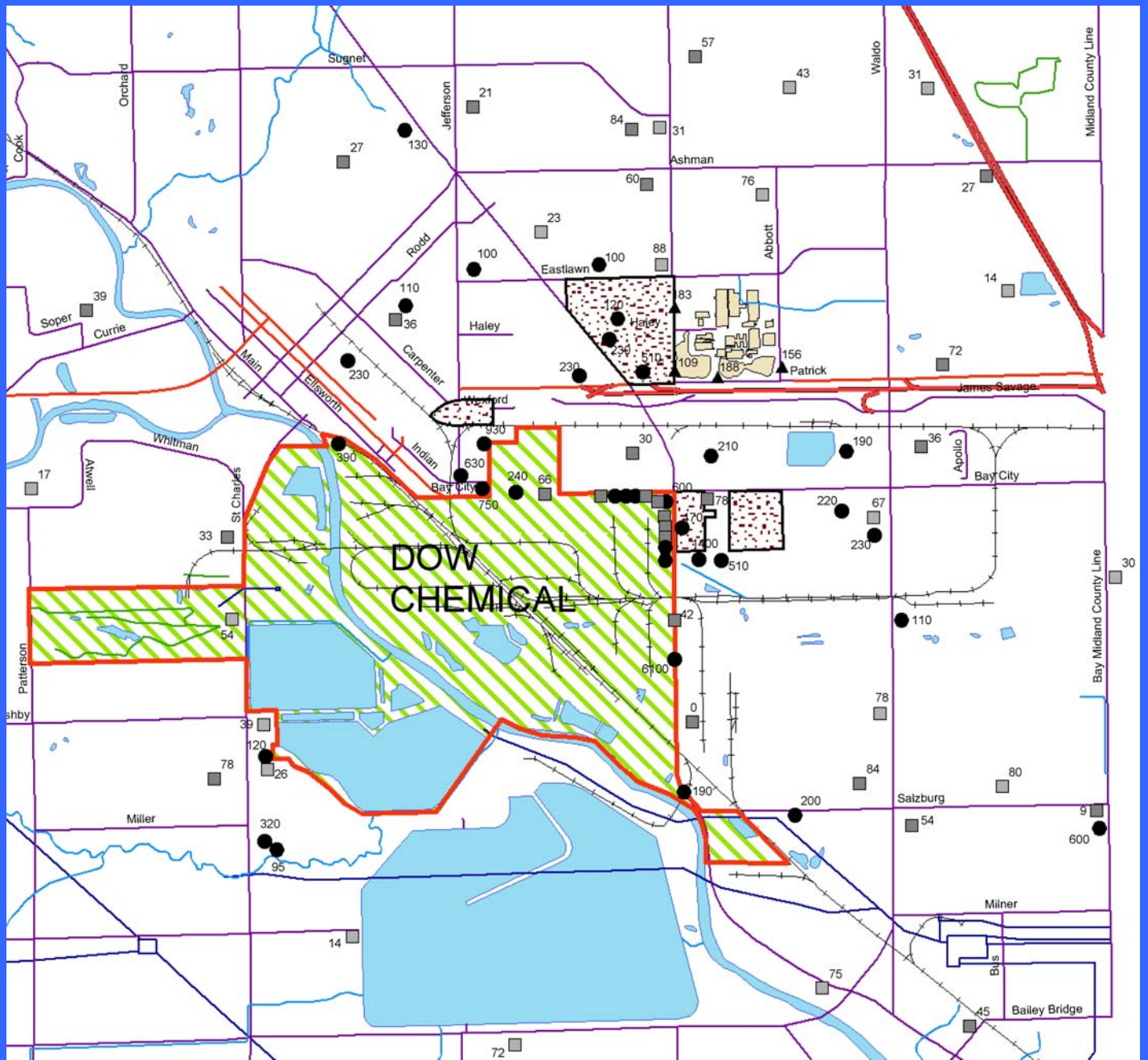
What's next?

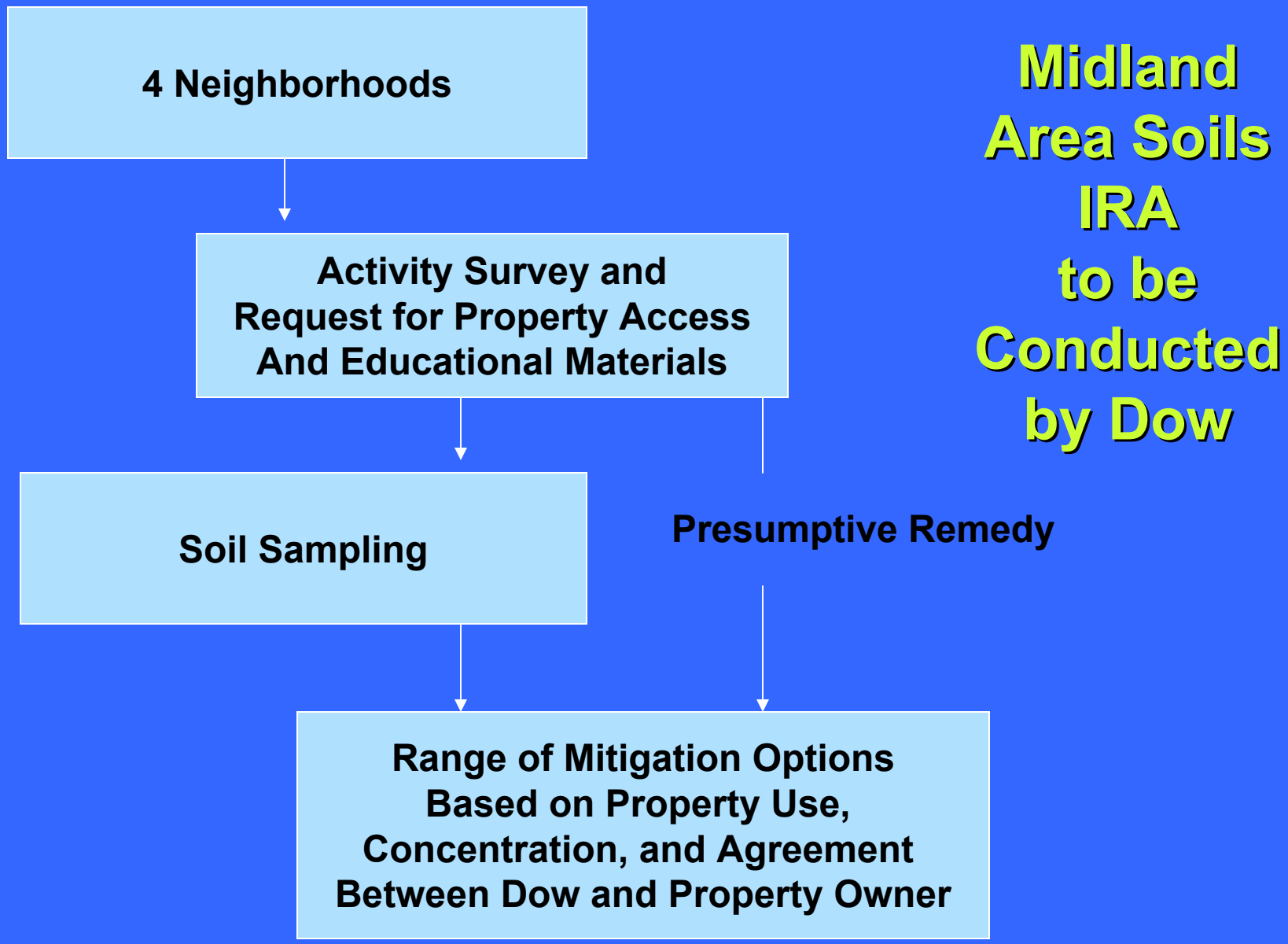
- License requires Dow to continue working with the state, community, and individual property owners to investigate and remediate, or otherwise appropriately address, off-site contamination

What's next? (Cont'd.)

- June - MDEQ expects to approve Dow's SOW with modifications
- Approved SOW will be the blueprint for investigating and remediating Midland area soils
- Upon approval Dow will begin IRA sampling in four neighborhoods

Summary of Midland Area Dioxin Samples




4 Neighborhoods
Activity Survey and
Request for Property Access
And Educational Materials
Soil Sampling
Presumptive Remedy
Range of Mitigation Options
Based on Property Use,
Concentration, and Agreement
Between Dow and Property Owner
Midland
Area Soils
IRA
to be
Conducted
by Dow

Our Commitment

- MDEQ continues our willingness to meet and work with Dow, city of Midland, and the community to select a remedy and ultimately reach finality

For More Information

- **www.michigan.gov/deqdioxin**
- **www.michigan.gov/tittabawassee**